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EXAMINER

MULL, FRED H

ART UNIT

PAPER NUMBER

3662

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/780,288

Applicant(s)

IKEDA, MASAYUKI

Examiner

Fred H. Mull

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 18-21, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 17 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to various objection(s), have been fully con
2. Applicant's arguments with respect to various 35 USC 112 rejection(s), have been fully considered and are persuasive. The rejection(s) have been withdrawn.
3. Applicant's arguments with respect to the rejection(s) over Krasner have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made over Imakado in view of Krasner, Mieno in view of Krasner, and Breed in view of Krasner.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-6, 8-11, 13-16, 18-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imakado in view of Krasner.

In regard to claims 1-6, 8-11, 13-16, and 19-21, Imakado discloses a positioning terminal having a receiving device for receiving the signals from first and second signal sources (102, Fig. 1);

a communication device for communicating between the control device and the positioning terminal (108); and

using a provided time from the synchronized second signal sources to limit a search for signals from the first signal sources, and using the signals from the first signal sources to determine the position of the positioning terminal (§5).

Imakado fails to disclose the system for synchronizing the second signal sources.

Krasner discloses a system for synchronizing second signal sources, comprising: a plurality of first signal sources (GPS satellites) each emitting a respective first signal, and one or more second signal sources (BSs) each emitting a respective second signal, the first signals being synchronous with a reference time and the second signals being non-synchronous with the first signals, for, based on a signal propagation time and signal propagation speed of the first signals, determining a distance from the positioning terminal to the first signal sources so as to determine a position of the positioning terminal, said positioning system comprising:

a measurement device (MS) for receiving the first signals from the first signal sources to determine the position P of the measurement device and a time of measurement when the measurement device receives the first signals and for, based on the time of measurement, measuring a receiving time (T_R), based on the reference time, of a predetermined event of the second signals (col. 7, line 34 to col. 7, line 7);

a control device for determining a signal propagation time (t) between the measurement device and one of the second signal sources by calculating a relative distance $|P-Q|$ between the measurement device and the one second signal source based on the position P measured by the measurement device and a position Q of the one second signal source and by dividing the resulting distance by the signal

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propagation speed, and for determining a time (TT), based on the reference time, at which the one second signal source originates the predetermined event by solving $TR-t$ (col. 3, lines 11-16).

It would have been obvious that a system to synchronize the second signal sources in Imakado would be necessary in order to practice the invention of Imakado, and it would further have been obvious to use a known synchronization system for the synchronization. The synchronization system of Krasner was a known synchronization system, therefore, it would have been obvious to use the known synchronization system of Krasner to synchronize the network of Imakado.

In regards to claims 18 and 23, Krasner further discloses the measurement device further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information and measures P and TR according to a request from the control device in the same mobile communication network report the measured P and TR to the control device in the same mobile communication network (col. 7, lines 37-40).

5. Claims 1-6, 8-11, 13-16, 18-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mieno in view of Krasner.

In regard to claims 1-6, 8-11, 13-16, and 19-21, Mieno discloses a positioning terminal having a receiving device for receiving the signals from first and second signal sources (abstract);

a communication device for communicating between the control device and the positioning terminal (abstract); and

using a provided time from the synchronized second signal sources to limit a search for signals from the first signal sources, and using the signals from the first signal sources to determine the position of the positioning terminal (abstract).

Mieno fails to disclose the system for synchronizing the second signal sources.

Krasner discloses a system for synchronizing second signal sources, comprising: a plurality of first signal sources (GPS satellites) each emitting a respective first signal, and one or more second signal sources (BSs) each emitting a respective second signal, the first signals being synchronous with a reference time and the second signals being non-synchronous with the first signals, for, based on a signal propagation time and signal propagation speed of the first signals, determining a distance from the positioning terminal to the first signal sources so as to determine a position of the positioning terminal, said positioning system comprising:

a measurement device (MS) for receiving the first signals from the first signal sources to determine the position a P of the measurement device and a time of measurement when the measurement device receives the first signals and for, based on the time of measurement, measuring a receiving time (TR), based on the reference time, of a predetermined event of the second signals (col. 7, line 34 to col. 7, line 7);

a control device for determining a signal propagation time (t) between the measurement device and one of the second signal sources by calculating a relative distance $|P-Q|$ between the measurement device and the one second signal source

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based on the position P measured by the measurement device and a position Q of the one second signal source and by dividing the resulting distance by the signal propagation speed, and for determining a time (TT), based on the reference time, at which the one second signal source originates the predetermined event by solving $TR-t$ (col. 3, lines 11-16).

It would have been obvious that a system to synchronize the second signal sources in Mieno would be necessary in order to practice the invention of Mieno, and it would further have been obvious to use a known synchronization system for the synchronization. The synchronization system of Krasner was a known synchronization system, therefore, it would have been obvious to use the known synchronization system of Krasner to synchronize the network of Mieno.

In regards to claims 18 and 23, Krasner further discloses the measurement device further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information and measures P and TR according to a request from the control device in the same mobile communication network report the measured P and TR to the control device in the same mobile communication network (col. 7, lines 37-40).

6. Claims 1-6, 8-11, 13-16, 18-21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breed in view of Krasner.

In regard to claims 1-6, 8-11, 13-16, and 19-21, Breed discloses a positioning terminal having a receiving device for receiving the signals from first and second signal sources (¶247);

a communication device for communicating between the control device and the positioning terminal (¶247); and

using a provided time from the second signal sources, which are synchronized by a measurement device receiving both first and second source signals (¶247, lines 10-13) to limit a search for signals from the first signal sources, and using the signals from the first signal sources to determine the position of the positioning terminal (¶247).

Breed fails to disclose the system for synchronizing the second signal sources using a measuring device.

Krasner discloses a system for synchronizing second signal sources, comprising:
a plurality of first signal sources (GPS satellites) each emitting a respective first signal, and one or more second signal sources (BSs) each emitting a respective second signal, the first signals being synchronous with a reference time and the second signals being non-synchronous with the first signals, for, based on a signal propagation time and signal propagation speed of the first signals, determining a distance from the positioning terminal to the first signal sources so as to determine a position of the positioning terminal, said positioning system comprising:

a measurement device (MS) for receiving the first signals from the first signal sources to determine the position a P of the measurement device and a time of measurement when the measurement device receives the first signals and for, based

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on the time of measurement, measuring a receiving time (TR), based on the reference time, of a predetermined event of the second signals (col. 7, line 34 to col. 7, line 7);

a control device for determining a signal propagation time (t) between the measurement device and one of the second signal sources by calculating a relative distance $|P-Q|$ between the measurement device and the one second signal source based on the position P measured by the measurement device and a position Q of the one second signal source and by dividing the resulting distance by the signal propagation speed, and for determining a time (TT), based on the reference time, at which the one second signal source originates the predetermined event by solving $TR-t$ (col. 3, lines 11-16).

It would have been obvious that a system to synchronize the second signal sources using a measuring device in Breed would be necessary in order to practice the invention of Breed, and it would further have been obvious to use a known synchronization system for the synchronization. The synchronization system using a measuring device of Krasner was a known synchronization system using a measuring device, therefore, it would have been obvious to use the known synchronization system using a measuring device of Krasner to synchronize the network of Breed.

In regards to claims 18 and 23, Krasner further discloses the measurement device further comprises a mobile terminal in good conditions, where the position P of the measurement device can be determined without accurate time information and measures P and TR according to a request from the control device in the same mobile

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communication network report the measured P and TR to the control device in the same mobile communication network (col. 7, lines 37-40).

7. Claims 7, 12, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of {Imakado in view of Krasner, Mieno in view of Krasner, and Breed in view of Krasner} and in further view of Vannucci.

Imakado in view of Krasner, Mieno in view of Krasner, and Breed in view of Krasner fail to disclose television broadcast stations as the second signal sources.

Vannucci discloses using television broadcast stations as secondary signal sources to be used with GPS satellites for positioning (¶6, 95).

It would have been obvious to use the known television broadcast station secondary signal sources of Vannucci as positioning transmitters for areas where the number of visible GPS satellites plus BSs are not sufficient for a position calculation.

Allowable Subject Matter

8. Claim(s) 17 and 22 would be allowable if amended to include all of the limitations of the base claim and any intervening claims.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 571-272-6975. The examiner can normally be reached on Monday through Friday from approximately 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Fred H. Mull
Examiner
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fhm

A handwritten signature in black ink, appearing to read "Thomas H. Tarcza". The signature is fluid and cursive, with the first name "Thomas" being more prominent than the last name "Tarcza".

THOMAS H. TARCZA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600